

## REFERENCES

- [1] J. S. Malik, H. Qiao, G. Pang, and A. van den Hengel, "Deep Learning for Hate Speech Detection: A Comparative Study," Feb. 2022, [Online]. Available: <http://arxiv.org/abs/2202.09517>
- [2] B. Breve, L. Caruccio, S. Cirillo, V. Deufemia, and G. Polese, "Analyzing the worldwide perception of the Russia-Ukraine conflict through Twitter," *J Big Data*, vol. 11, no. 1, Dec. 2024, doi: 10.1186/s40537-024-00921-w.
- [3] C. Liu, Y. Tian, Y. Shi, Z. Huang, and Y. Shao, "An analysis of public topics and sentiments based on social media during the COVID-19 Omicron Variant outbreak in Shanghai 2022," *Computational Urban Science*, vol. 4, no. 1, Dec. 2024, doi: 10.1007/s43762-024-00128-y.
- [4] I. Oluwasegun Adeniyi, N. A. Sande, A. Akinkunmi Author, and I. Oluwasegun, "Social Media Sentiment Analysis: A Comprehensive Analysis", doi: 10.13140/RG.2.2.31094.37441.
- [5] Nasrabadi N, Wicaksono H, and Valilai O, "Shopping marketplace analysis based on customer insights using social media analytics," *MethodsX*, vol. 9, Jan. 2022, doi: 10.1016/j.mex.2022.101932.
- [6] Q. A. B. K. Zaman, W. N. S. B. W. Yusoff, and Q. B. B. A. Shah, "Sentiment Analysis on The Place of Interest in Malaysia," *Journal of Advanced Research in Applied Sciences and Engineering Technology*, vol. 43, no. 1, pp. 54–65, Jan. 2025, doi: 10.37934/araset.43.1.5465.
- [7] A. Müller and M. Lopez-Sanchez, "Countering Negative Effects of Hate Speech in a Multi-Agent Society," in *Frontiers in Artificial Intelligence and Applications*, IOS Press BV, Oct. 2021, pp. 103–112, doi: 10.3233/FAIA210122.
- [8] J. Forry Kusuma and A. Chowanda, "Indonesian Hate Speech Detection Using IndoBERTweet and BiLSTM on Twitter," 2020. [Online]. Available: [www.joiv.org/index.php/joiv](http://www.joiv.org/index.php/joiv)
- [9] F. Nadia Puteri and Y. Sibaroni, "Hate Speech Detection in Indonesia Twitter Comments Using Convolutional Neural Network (CNN) and FastText Word Embedding," vol. 7, no. 3, pp. 1154–1161, 2023, doi: 10.30865/mib.v7i3.6401.
- [10] M. Hayaty, A. D. Laksito, and S. Adi, "Hate speech detection on Indonesian text using word embedding method-global vector," *IAES International Journal of Artificial Intelligence*, vol. 12, no. 4, pp. 1928–1937, Dec. 2023, doi: 10.11591/ijai.v12.i4.pp1928-1937.
- [11] I. Zulfikar, M. Nasrun, S. Si, and C. Setianingsih, "Deteksi Ujaran Kebencian Menggunakan Algoritma Glove Dan Deep Belief Network (Dbn)." Universitas Telkom, 2019.
- [12] N. Badri, F. Koubi, and A. H. Chaibi, "Combining FastText and Glove Word Embedding for Offensive and Hate speech Text Detection," in *Procedia Computer Science*, Elsevier B.V., 2022, pp. 769–778, doi: 10.1016/j.procs.2022.09.132.
- [13] R. Rana, "Gated Recurrent Unit (GRU) for Emotion Classification from Noisy Speech," Dec. 2016, [Online]. Available: <http://arxiv.org/abs/1612.07778>
- [14] M. Zulqarnain, R. Ghazali, Y. M. M. Hassim, and M. Rehan, "Text classification based on gated recurrent unit combines with support vector machine," *International Journal of Electrical and Computer Engineering*, vol. 10, no. 4, pp. 3734–3742, 2020, doi: 10.11591/ijece.v10i4.pp3734-3742.
- J. Pennington, R. Socher, and C. D. Manning, "GloVe: Global Vectors for Word Representation." <https://nlp.stanford.edu/projects/glove> (accessed: Apr. 01, 2024).
- M. Devansh, H. YiDong, Alves de Oliveira, and Thiago Eustaquio, "A Curated Hate Speech Dataset," 2022.
- A. Toosi, "Twitter Sentiment Analysis." Accessed: Apr. 25, 2024. [Online]. Available: <https://www.kaggle.com/datasets/arkhoshghalb/twitter-sentiment-analysis-hatred-speech/>
- D. Putri *et al.*, "Hate Speech Detection on Twitter Approaching The Indonesian Election Using Machine Learning," Universitas Indonesia, 2018.
- J. Patihullah and E. Winarko, "Hate Speech Detection for Indonesia Tweets Using Word Embedding And Gated Recurrent Unit," *IJCCS (Indonesian Journal of Computing and Cybernetics Systems)*, vol. 13, no. 1, p. 43, Jan. 2019, doi: 10.22146/ijccs.40125.
- H. Imaduddin, L. A. Kusumaningtyas, and F. Y. A'la, "Application of LSTM and GloVe Word Embedding for Hate Speech Detection in Indonesian Twitter Data," *Ingénierie des systèmes d information*, vol. 28, no. 4, pp. 1107–1112, Aug. 2023, doi: 10.18280/isi.280430.
- A. Ahmad Aliero, B. Sulaimon Adebayo, H. Olanrewaju Aliyu, A. Gogo Tafida, B. Umar Kangiwa, and N. Muhammad Dankolo, "Systematic Review on Text Normalization Techniques and its Approach to Non-Standard Words," 2023.
- J. Pennington, R. Socher, and C. D. Manning, "GloVe: Global Vectors for Word Representation." <https://nlp.stanford.edu/data/glove.6B.zip>(accessed: Apr. 01, 2024)
- A. Rahmadeyan and Mustakim, "Long Short-Term Memory and Gated Recurrent Unit for Stock Price Prediction," in *Procedia Computer Science*, Elsevier B.V., 2024, pp. 204–212. doi: 10.1016/j.procs.2024.02.167.
- R. Achmad, Y. Tokoro, J. Haurissa, and A. Wijanarko, "Recurrent Neural Network-Gated Recurrent Unit for Indonesia-Sentani Papua Machine Translation," *Journal of Information Systems and Informatics*, vol. 5, no. 4, pp. 1449–1460, Dec. 2023, doi: 10.51519/journalisi.v5i4.597.
- S. Manna, "K-Fold Cross Validation for Deep Learning Models using Keras." Accessed: Jul. 11, 2024. [Online]. Available: <https://medium.com/the-owl/k-fold-cross-validation-in-keras-3ec4a3a00538>
- A. M. Peco Chacón, I. Segovia Ramírez, and F. P. García Márquez, "K-nearest neighbour and K-fold cross-validation used in wind turbines for false alarm detection," *Sustainable Futures*, vol. 6, Dec. 2023, doi: 10.1016/j.sftr.2023.100132.
- M. Hasnain, M. F. Pasha, I. Ghani, M. Imran, M. Y. Alzahrani, and R. Budiarto, "Evaluating Trust Prediction and Confusion Matrix Measures for Web Services Ranking," *IEEE Access*, vol. 8, pp. 90847–90861, 2020, doi: 10.1109/ACCESS.2020.2994222.